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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/575,656	11/28/2006	Rudi Mueller-Walz	28069-625N01US	2553
35437	7590	11/22/2010	EXAMINER	
MINTZ LEVIN COHN FERRIS GLOVSKY & POPEO ONE FINANCIAL CENTER BOSTON, MA 02111			KENNEDY, NICOLETTA	
ART UNIT	PAPER NUMBER			
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/575,656	MUELLER-WALZ ET AL.	
	Examiner	Art Unit	
	Nicoletta Kennedy	1611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 08 September 2010.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1,3-7 and 12-23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1,3-7 and 12-23 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>9/8/10</u> .	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Status of Claims

Claims 1, 3-7 and 12-23 are currently pending.

Priority

This application, filed April 14, 2006, is a national stage entry of PCT/IB04/03804 filed November 11, 2004, and claims foreign priority to United Kingdom application 03266327, filed November 14, 2003. The International Bureau has provided a certified copy of the United Kingdom application.

New Claim Rejections Necessitated by Amendment

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 3-7, 12, 14 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staniforth et al. (WO 01/78693) (pub. Oct. 25, 2001) (provided by Applicants) in view of Vectura (US 6,521,260) (issued Feb. 19, 2003).

Regarding claim 1, Staniforth et al. teach a powdery formulation comprising active ingredients, coarse carrier particles and from 0.02 to 1.5% by weight of magnesium stearate in the final formulation (p. 5-6; p. 14, lines 12-17). The magnesium stearate particles partially coat the surface of the excipient particles or the coarse carrier particles (p. 6, lines 19-21). The surface coverage of the coarse carrier particles can vary depending on the amount and particle size of the fine fraction and is at least 5% (p. 11, lines 3-8). However, Staniforth et al. do not teach specific values for the amount of magnesium stearate by weight when the surface coverage of the carrier is less than 5%. The broad teachings of Staniforth et al. in view of MPEP 2144.05 cure this deficiency.

MPEP 2144.05 states that “[i]n the case where the claimed ranges ‘overlap or lie inside ranges disclosed by the prior art’ a *prima facie* case of obviousness exists” quoting *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). With regard to the

amount of magnesium stearate, the claimed range of at least 0.5% by weight of the formulation overlaps the range of 0.02 to 1.5% taught by the prior art and is therefore *prima facie* obvious.

However, Staniforth et al. do not teach that the surface coverage is less than 5%. Vectura cures this deficiency.

Vectura teaches a powder for use in a dry powder inhaler wherein magnesium stearate may be used as an additive (abstract and column 5, line 60) and wherein it is desirable to have a discontinuous coating of the additive and wherein the additive material and the carrier particles are mixed for between 0.1 and 0.5 hours (column 7, lines 1-19 and column 8, lines 47-50).

It would have been *prima facie* obvious to a person of ordinary skill in the art at the time of the invention to have combined the teachings of Staniforth et al. with those of Vectura to use discontinuous magnesium stearate covering. One would have been motivated to do so because Staniforth et al. teach that coverage of magnesium stearate should be at least 5% but Vectura, published approximately 18 months later, reflect the changed knowledge in the art that a discontinuous coverage where only limited portions of each lactose particle is covered, is advantageous. This new teaching, that less coverage of lactose is sufficient to increase the respirable fraction of the active material, provides motivation for one of ordinary skill in the art to use try using less than 5% surface coverage with an expectation of the same results as that of Staniforth (see figure 1 and abstract of Vectura). Further, MPEP 2144.05 states that “a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but

are close enough that one skilled in the art would have expected them to have the same properties" (quoting *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 774 (Fed. Cir. 1985)). Vectura gives one of ordinary skill in the art this expectation.

Regarding claim 2, Staniforth et al. teach that the surface coverage of the coarse carrier particles can vary depending on the amount and particle size of the fine fraction and is at least 5% (p. 11, lines 3-8). MPEP 2144.05 states that "[i]n the case where the claimed ranges 'overlap or lie inside ranges disclosed by the prior art' a *prima facie* case of obviousness exists" quoting *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). In the instant case, with regard to the surface coverage, the instant range of less than 10% overlaps the prior art range of at least 5% and is therefore *prima facie* obvious.

Regarding claims 3-4, Staniforth et al. teach that the formulation comprises from 0.02 to 1.5% by weight of magnesium stearate in the final formulation (p. 5-6; p. 14, lines 12-17). MPEP 2144.05 states that "[i]n the case where the claimed ranges 'overlap or lie inside ranges disclosed by the prior art' a *prima facie* case of obviousness exists" quoting *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). In the instant case, with regard to the surface coverage, the claimed ranges lie within the range taught by the prior art and are therefore *prima facie* obvious.

Regarding claims 5, 12 and 14, Staniforth et al. teach that the active ingredients are preferably Formoterol and Budesonide (p. 5-6; claim 3).

Regarding claims 6-7 and 22, Staniforth et al. teach that the carrier is alpha-lactose monohydrate (p. 14-15; claim 9).

Response to Arguments

Applicant's arguments filed September 8, 2010 have been fully considered but they are not persuasive. Applicant argues that Chiesi Pharmaceuticals (supplied by Applicant as evidence of the knowledge in the art) teaches that it is desirable to coat as much of the surface of the carrier particles as possible using a small amount of lubricant (remarks, p. 6). Applicant cites Chiesi at p. 5, lines 6-9 and p. 6, lines 20-22. While this is an accurate characterization of Chiesi, Staniforth do not follow these teachings. Staniforth teach that a larger amount of magnesium stearate may be used and that the surface coverage is lower than that of Chiesi (p. 11, lines 3-8 and p. 14, lines 12-18). Because Staniforth has expanded upon the ranges taught by Chiesi, Chiesi does not reflect the understanding of one of ordinary skill in the art at the time of Staniforth. Further, Vectura, published after Staniforth, reflects the changed knowledge in the art that less coverage of the carrier by an additive such as magnesium stearate still results in an increased respirable fraction of the active material. As noted by Applicants, Chiesi teaches that by increasing mixing time, an increase in degree of coating occurs (remarks, p. 6). However, Vecture teaches decreased mixing time, thus presumably teaching a decrease in degree of coating.

Further, other than a statement that Applicant has found unexpected results because of the less than 5% surface coverage, there is no quantitative data provided to document such results.

5. Claims 13, 15-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Staniforth et al. (WO 01/78693) (pub. Oct. 25, 2001) (provided by Applicants) and Vectura (US 6,521,260) (issued Feb. 19, 2003) as applied to claims 1, 3-7, 12, 14 and 22 above, and further in view of Keller et al. (WO 00/28979) (pub. May 25, 2000) (machine translation)

Regarding claims 13 and 15-21, Staniforth et al. and Vectura teach each limitation of claims 1 and 5 but fail to teach the specific active ingredients of claims 13 and 15-21. Keller et al. cure this deficiency.

Regarding claims 13 and 15-21, Keller et al. teach a dry powder for inhalation comprising magnesium stearate to improve the moisture resistance of the dry powder (p. 1 and 3). The active ingredient may be formoterol, budesonide, tiotropium, ipratropium, oxitropium, glycopyrronium, andolast, iralukast, pranlukast, imitrodast, seratrodast, zileuton, zafirlukast, montelukast, filaminast, piclamilast, apafant, forapafant, israpafant, amiloride, furosemide, morphine, fentanyl, pentazocine, buprenorphine, pethidine, tilidine, methadone, heroin, sildenafil, alprostadil, phentolamine, or a peptide such as insulin, erythropoietin, gonadotropin or vasopressin (p. 5).

It would have been prima facie obvious to a person of ordinary skill in the art at the time of the invention to have combined the teachings of Staniforth et al. and Vectura with those of Keller et al. to substitute known active agents delivered via a dry powder formulation for formoterol and/or budesonide. One would have been motivated to do so because Keller et al. teach that the active compound in a dry powder formulation

comprising magnesium stearate may be chosen from several active compounds, including formoterol and budesonide.

Regarding claim 23, Keller et al. teach that the carrier is in most cases lactose but may also be mannitol (p. 2). It would have been within the purview of a skilled artisan to substitute mannitol for lactose since Keller et al. teach that either may be used as a carrier material in a dry powder inhalation formulation.

Response to Arguments

Applicant's arguments filed September 8, 2010 have been fully considered but they are not persuasive. The addition of Vectura has rendered Applicant's arguments against Staniforth as evidenced by Chiesi moot. See above Response to Arguments.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1, 3-7 and 12-23 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 10 and 26-42 of copending Application No. 12/536,980 in view of Staniforth et al. WO 01/78693 (pub. Oct. 25, 2001).

Both the instant claims and the copending claims are directed to a dry powder formulation for inhalation comprising active particles and carrier particles for supporting the active particles, the formulation further comprising magnesium stearate wherein the magnesium stearate is disposed on the surface of the carrier particles to provide a surface coverage of less than 5% on the carrier particles. However, the copending claims claim a multi-dose dry powder inhaler containing the dry powder formulation. Staniforth et al. cure this deficiency.

Staniforth et al. teach a powdery formulation for use in a multidose dry powder inhaler comprising active ingredients, coarse carrier particles and from 0.02 to 1.5% by weight of magnesium stearate in the final formulation (p. 2, lines 6-9; 5-6; p. 14, lines 12-17; claim 1).

Therefore, it would have been *prima facie* obvious to a person of ordinary skill in the art at the time of the invention to have combined the claims of the instant application with the teachings of Staniforth et al. to use the dry powder formulation in a multi-dose dry powder inhaler. One would have been motivated to do so because Staniforth et al. teach the same formulation as in the instant and copending claims and teach that the formulation may be used in a multi-dose dry powder inhaler.

This is a provisional obviousness-type double patenting rejection.

Response to Arguments

Applicant's arguments filed September 8, 2010 have been fully considered but they are not persuasive. Applicant has requested that the provisional obviousness-type double patenting rejection be held in abeyance. This is agreed. However, as the instant and copending claims are still not patentably distinct from each other, the rejection is maintained in modified form due to claim amendments and cancellations.

Conclusion

No claims are allowable.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicoletta Kennedy whose telephone number is

(571)270-1343. The examiner can normally be reached on Monday through Friday 11:30 to 8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sharmila Gollamudi Landau can be reached on 571-272-0614. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. K./
Examiner, Art Unit 1611

/Anne R Kubelik/
Primary Examiner, Art Unit 1638